AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1.-16. (Canceled)

17. (Currently Amended) A method for producing a gradient in index-of-refraction in an optical material comprising a photosensitive optical material, the method comprising irradiating the photosensitive optical material to create a light-induced gradient in index-of-refraction, wherein the irradiating of the photosensitive optical material is performed for a selected period of time with light having an intensity and wavelength to induce the gradient in index-of-refraction along ~~an irradiation~~ the direction of the irradiating, the gradient in index-of-refraction at least about 1×10^{-8} index units per micron.

18. (Original) The method of claim 17 wherein the optical material comprises a planar optical structure.

19. (Original) The method of claim 18 wherein the gradient in index-of-refraction is oriented along the plane of the structure.

20. (Original) The method of claim 18 wherein the gradient in index-of-refraction is oriented perpendicular to the plane of the structure.

21. (Original) The method of claim 17 wherein the optical material comprises an optical fiber preform or portion thereof with an aspect ratio of at least about 5.

22. (Original) The method of claim 17 wherein the photosensitive optical material comprises at least about 1 mole percent germanium as a fraction of the total metal/metalloid content of the photosensitive optical material.

23. (Canceled)

24. (Previously Presented) The method of claim 17 wherein the light intensity and the composition of the photosensitive material produce absorption of the light in the linear Beer's law regime of spatial variation.

25. (Previously Presented) The method of claim 17 wherein the light intensity and the composition of the photosensitive material produce absorption of the light with non-linear spatial variation.

26. (Original) The method of claim 17 wherein the photosensitive optical material comprises a gradient in composition of a dopant that induces photosensitivity of the material wherein the composition gradient results in the index-of-refraction gradient following illumination.

27. (Original) The method of claim 17 wherein the gradient in index-of-refraction extends across a distance of at least about 10 microns.

28.-52. (Canceled)

53. (Currently Amended) A method for producing a gradient in index-of-refraction in an optical material comprising a photosensitive optical material, the method comprising irradiating the photosensitive optical material to create a light-induced gradient in index-of-refraction, wherein the photosensitive optical material comprises a gradient in composition of a dopant that induces photosensitivity of the material wherein the composition gradient results in the index-of-refraction gradient following the irradiating ~~illumination~~.

54. (Previously Presented) The method of claim 53 wherein the optical material comprises a planar optical structure.

55. (Previously Presented) The method of claim 54 wherein the gradient in index-of-refraction is oriented along the plane of the structure.

56. (Previously Presented) The method of claim 54 wherein the gradient in index-of-refraction is oriented perpendicular to the plane of the structure.

57. (Previously Presented) The method of claim 53 wherein the optical material comprises an optical fiber preform or portion thereof with an aspect ratio of at least about 5.

58. (Previously Presented) The method of claim 53 wherein the photosensitive optical material comprises at least about 1 mole percent germanium as a fraction of the total metal/metalloid content of the photosensitive optical material.

59. (Previously Presented) The method of claim 53 wherein the irradiating of the photosensitive optical material is performed for a selected period of time with light having an intensity and wavelength to induce the gradient index-of-refraction along the irradiation direction.

60. (Previously Presented) The method of claim 59 wherein the light intensity and the composition of the photosensitive material produce absorption of the light in the linear Beer's law regime of spatial variation.

61. (Previously Presented) The method of claim 59 wherein the light intensity and the composition of the photosensitive material produce absorption of the light with non-linear spatial variation.

62. (Previously Presented) The method of claim 53 wherein the gradient in index-of-refraction extends across a distance of at least about 10 microns.

63. (Previously Presented) The method of claim 53 wherein the gradient in index-of-refraction is at least about 1×10^{-8} index units per micron.